PRELIMINARY DESIGN CHECKLIST – PIPE CULVERT

DATE: 1-1-2018

County:_____ **Check By:**_____ **Date:**_____

Project Location:_____ **Consultant:**_____

GENERAL

___ Abbreviations - Use as needed. Reference [BDM 13.1.4]

___ Bench Mark – Use coordinates/description per plan set

___ Hydraulic Data table - include Drainage Area, Q_{50} cfs.

___ Location table

___ Title Block – Diameter x Length including pipe type

___ Skew angle – same as shown in plan view

___ Project number and file number

___ Scale bar

___ North arrow

___ Culvert staging details: denote how drainage accounted for between stages

___ NOTES: use as needed

___ Structural Design: if required due to use of flume, drop inlet, scour floor, etc., use RCB plan development format/checklist. Design number is required.

___ Use Class B bedding for all roadway pipe applications

___ Use Class C bedding for temporary, entrance, levee or dike pipe applications

PLAN VIEW

___ Label "Plat Plan"

___ Ground elevations, contours, and topography. Label contour elevations

___ Existing utilities: as noted in CAD from survey

___ Existing structures: include general description

___ Proposed length: include dimensions as-needed from culvert typicals, e.g., lengths left and right, total length, dimensions A, B, C, etc.

___ Proposed station on road construction centerline

___ Skew angle of culvert to roadway

___ Skew angle of extension to existing pipe, if other than 0 degrees

___ Proposed lane and shoulder widths

___ Proposed embankment and ditch shaping

___ Label centerline culvert/road construction

___ Label stationing on at least two "tic" marks in the plan view

___ Drainage: show direction of flow

___ Check that all text and dimensioning is legible and not placed on top of other text or features

___ Trenchless construction: use concrete pipe unless dictated by clearance or construction schedule. Use current specification directives

___ Do not show revetment at pipe inlet/outlet – to be provided by Road Design

LONGITUDINAL SECTION

___ Roadway section drawn perpendicular to road

___ Projection along centerline of culvert (true length not shown for skewed culverts)

___ Existing ground line and proposed grade line shown and labeled

___ Show existing structure(s)

___ Proposed flow-lines at inlet, outlet, or other breaks as needed from culvert typicals

___ Label degree of elbows used (1201, 1501, etc.)

___ Label roadway fore-slope used (e.g., 6:1, 3.5:1)

___ Profile grade elevation at intersection of culvert and road centerline

___ Q 'Design' water surface elevation (per data block)

___ Show maximum fill height and location.

___ If fill height greater than Road Standard Plan RF-31 Class B bedding charts, use PipePac for special design

CADD CHECKLIST

___ Use current Micro Station V8 Tools and Documentation files as shown under Automation Tools on IaDOT's web site.

___ Verify the Iowa Regional Coordinate System is correct for this project site

___ ProjectWise – Follow current guidelines as published by IaDOT including Prelim Deliverable Format found at http://www.iowadot.gov/bridge/v8docs.htm

___ **Micro-Station File and Model Naming Convention**

- The file is named STR_county/route/paren_design firm_IaRCS Zone.dgn (i.e. STR_42065042_DOT_Z04.dgn or STR_42065042_ XYZCRP_Z04.dgn) where the paren number is for the project. Always use three digits for the route and paren number using a preceding zero when necessary.
- The model name containing the preliminary layout of the structures is STR_Prelim_Pipes. These models provide separation from the design numbered bridges and culverts used by Office of Design and final bridge designers.

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- Model names for each Pipe Plat within the project area of the STR file are named P_County_Station (i.e. P_42_208+00).
- For multiple Pipe Plat sheets for any one culvert, tag with Stage designation (i.e. P_42_208+00_S1. P_42_208+00_S2, etc.).